ABSTRACT

A vapor reaction method including the steps of providing a pair of first and second electrodes within a reaction chamber where the pair of electrodes are arranged substantially parallel with each other. The method further includes the steps of placing a substrate in the reaction chamber where the substrate is held by said first electrode so that a first surface of the substrate faces toward the second electrode. A first film forming gas is introduced into the reaction chamber through the second electrode. The first film forming gas is excited to form a first insulating film by vapor deposition. The first insulating film may be silicon nitride. The method may also include the step of introducing a second film forming gas into the reaction chamber through the second electrode to ultimately form a second film. After removing the substrate from the reaction chamber, a cleaning gas may then be introduced through the second electrode to remove unnecessary layers from the inside of the reaction chamber.